



## **Residual spatial interpolation of ambient ozone concentrations in Belgium**

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In the telemetric network of the three Belgian regions ambient ozone concentrations are systematically measured at more than 30 sites. The average distance between nearest measuring stations is about 25 km. In spite of this dense coverage it remains non-trivial to make an accurate spatial interpolation from these values. Besides regional differences, which are mainly meteorological from origin, ambient ozone can have a distinct local character due to air pollution. In Belgium, an increased NO<sub>x</sub> level usually is accompanied by a reduced ozone concentration, which is clearly noticeable in urban areas with a lot of traffic. We describe an interpolation model that was developed to incorporate both the regional and local scale of the ozone phenomenon. In a first step the local differences are reduced. Using the population density as a measure for the NO<sub>x</sub> pollution a spatial trend is estimated for the average ozone value. After removing this trend, a regional interpolation is performed on the residual values. An unbiased estimator is used and the RMS error is statistically minimised with respect to an estimated spatial covariance. For the estimation of the covariance and the trend the availability of a time series for ozone was exploited. In conclusion a comparison is made of the model with the inverse distance weighting interpolation.